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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,504	02/29/2000	NORIMITSU SAKO	105393	1188

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

YE, LIN

ART UNIT PAPER NUMBER

2615

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/515,504

Applicant(s)

SAKO, NORIMITSU

Examiner

Lin Ye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-11,13-17,19,21-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,8,9,11,13,16,17,19,23,25 and 28 is/are allowed.
- 6) ☒ Claim(s) 6,7,10,14,15,21,22,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 6-7, 10, 14, 15, 21, 22, 26 and 27 filed on 8/2/04 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Brehmer et al. U.S. Patent 6,130,423.

Referring to claim 6, the Lee reference discloses in Figures 3-5, a CMOS image sensor comprising plurality of pixel sensors (PX11-PXmn, see Col. 3, lines 13-15) arranged in a two-dimensional array; a pair of pass transistors (NM42 and NM43) for passing a photo gate control signal (from a predetermined poison in a pixel sensor structure Pxji) thereby transferring corresponding signal charges, only when a corresponding row is selected; and a pair of pass transistors for passing a pixel transfer signal thereby allowing corresponding signal charges to be transferred, only when a corresponding column block is selected (et.

Unlike the CCD image sensor, CMOS APS image sensor allows arbitrary pixels to be selected, the block of pixels in the CMOS image sensor can be selected by column reading unit 40 and rows selection decoder 10, see Col. 3, lines 15-30 and Col. 5, lines 1-32).

However, the Lee reference does not explicitly show the pixel sensors are photo gate pixel sensors instead of photo diode sensors.

The Brehmer reference teaches in Figures 1 and 5, a CMOS image sensor (See Col. 2, lines 25-30) comprising a photo sensor circuit (520). The photosensor circuit (520) can be conventional photo diode, a photo gate circuit, or any other circuit that translates light into a voltage value (See Col. 4, lines 25-31). The Brehmer reference is evidence that one of ordinary skill in the art at the time to see more advantages CMOS image sensor having more flexible option to user either photo diode or photo gate for detecting light and translates light into a voltage value. For that reason, it would have been obvious to the CMOS sensor has a plurality photo gate pixel sensors disclosed by Lee.

4. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Brehmer et al. U.S. Patent 6,130,423 and Pain et al. U.S. Patent 6,326,230.

Referring to claim 7, the Lee and Brehmer references disclose all subject matter as discussed in respected claims 6, except the reference does not explicitly show wherein said pixel transfer signal falls down before said photo gate control signal rises up.

The Pain reference discloses in Figure 3D, a pixel transfer signal (TX) falls down before the photo gate control signal (PG) rises up. The Pain reference is evidence that one of

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ordinary skill in the art at the time to see more advantages photo gate control signal rises up after the pixel transfer signal falls to prevent any charge from flowing back into sense nodes (See Col. 6, lines 8-13). For that reason, it would have been obvious to the CMOS sensor including means for pixel transfer signal falls down before said photo gate control signal rises up disclosed by Lee.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Brehmer et al. U.S. Patent 6,130,423 and Umeda et al. U.S. Patent 6,452,632.

Referring to claim 10, the Lee and Brehmer references disclose all subject matter as discussed in respected claims 6, except the reference does not explicitly show means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block.

The Umeda reference discloses in Figures 20A-B and 90, a CMOS image sensor (see Col. 14, lines 44-54), comprising a pixel sensor; and means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block. The Umeda reference is evidence that one of ordinary skill in the art at the time to see more advantages the CMOS type image sensor can be designed to selectively activate horizontal and vertical scanning lines to allow arbitrary pixels to be read out. For that reason, it would have been obvious to the CMOS image sensor has means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block disclosed by Lee.

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6. Claims 14, 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Brehmer et al. U.S. Patent 6,130,423 and Arai et al. U.S. Patent 5,128,769.

Referring to claims 14, 21 and 26, the Lee and Brehmer references disclose all subject matter as discussed in respected claim 6, except the reference does not explicitly state automatically adjusting the gain, focus and detecting substantial change in an image based on a several blocks in a central area of said CMOS image sensor.

The Arai reference discloses in Figures 1-2 and 10, a video camera includes an image sensor (2) of CCD or MOS type for estimating the average brightness over an entire screen of said image sensor from brightness detected for a several blocks in a central area (See Figure 2, central area 23A) and in a peripheral area of the screen (23B) (See Col. 5, lines 49-60 and Col. 6, lines 1-20); and a programmable gain amplifier (variable gain amplifier 64) having a gain that is automatically controlled in accordance with the estimated brightness (See Figure 10 and Col. 15, lines 44-55); detecting whether there is a substantial change in an image by reading several blocks in a central area and in peripheral area of an image screen of the image sensor; means for continuously taking an image over the entire screen when a substantial change is detected (See Col. 14, lines 61-68 and Col. 15, lines 1-4); adjusting focus by reading several blocks in a central area of an image screen of said CMOS image sensor; and means for taking an image over the entire screen after completion of the focus adjustment (See Col. 9, lines 7-18). The Arai reference is evidence that one of ordinary skill in the art at the time to see more advantages the video camera system can perform center area weighted measuring mode to obtain a proper exposure, focus adjustment and suppress an

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unstable change in the exposure amount for a principal subject (as center area of image) caused by a motion of the principal subject or the video camera. For that reason, it would have been obvious to the camera device can perform automatically adjusting the gain, focus and detecting substantial change in an image based on a several blocks in a central area of said CMOS image sensor disclosed by Lee.

7. Claim 15, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Brehmer et al. U.S. Patent 6,130,423, Pain et al. U.S. Patent 6,326,230 and Arai et al. U.S. Patent 5,128,769.

Referring to claims 15, 22 and 27, the Lee, Pain and Arai references disclose all subject matter as discussed with respected to same comment as with claims 6-7, 14, 21 and 26.

Allowable Subject Matter

8. Claim 1,4, 8-9, 11, 13, 16-17, 19, 23, 25 and 28 allowed.

Please see the previous examiner office action mailed on 3/11/04 for the statement of reasons for allowance.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is (703) 305-3250. The examiner can normally be reached on Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lin Ye
October 13, 2004
